REMARKS

Claims 1, 3, 4, 6, 8-11, 13, 14, 16-23, 25, 27, 28, 30, 32-38 and 40-47 are in the case and presented for reconsideration.

Claims 1, 3, 4, 6, 8-11, 13, 14, 16-23, 25, 27, 28, 30, 32-38 and 40-47 have been provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-22 of copending Application No. 10/173,339. Claims 1, 3, 4, 6, 8-11, 13, 14, 16-23, 25, 27, 28, 30, 32-38 and 40-47 have been provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-27 of copending Application No. 10/173,197. Claims 1, 3, 4, 6, 8-11, 13, 14, 16-23, 25, 27, 28, 30, 32-38 and 40-47 have been provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-17 of copending Application No. 10/173,298.

As set forth in MPEP §804, a:

> ... "provisional" double patenting rejection should continue to be made by the examiner in each application as long as there are conflicting claims in more than one application unless that "provisional" double patenting rejection is the only rejection remaining in one of the applications. If the "provisional" double patenting rejection in one application is the only rejection remaining in that application, the examiner should then withdraw that rejection and permit the application to issue as a patent, thereby converting the "provisional" double patenting rejection in the other application(s) into a double patenting rejection at the time the one application issues as a patent.

It should be noted that U.S. Patent Application Nos. 10/173,339; 10/173,197; and 10/173,298 are still pending in the U.S. Patent Office and have not issued as a respective patent. Additionally, Applicant expects that these provisional double patenting rejections will be the

only rejection remaining after a decision on the merits for the present application. Accordingly, Applicant respectfully requests that the Examiner withdraw these provisional rejections and permit the present application to issue as a patent upon a decision on the merits in Applicant's favor for the present application.

Claims 1, 3-6, 8, 12-14, 16, 20-23, 25, 27-30, 32, 36-38, 40 and 44-47 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over by U.S. Patent Application No. 2001/0051766 (Gazdzinski) in view of US Patent No. 6,380,732 (Gilboa). Claims 9-11, 17-19, 33-35 and 41-43 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Gazdzinski in view of Gilboa and further in view of U.S. Patent No. 6,762,066 (Law et al.).

Applicant respectfully traverses as follows. The invention being claimed in Claims 1, 4, 8 and 16 respectively of the present application is an apparatus for determining the position of an object within a patient's body comprising at least one acoustic generator for generating a first acoustic wave toward the body at a first frequency and a wireless acoustic tag fixed to the object comprising a shell having a cavity and a medium contained within the shell wherein the wireless tag emits a second acoustic wave at a second frequency different from the first frequency (Claim 1) or at least one acoustic generator for generating a first acoustic wave toward the body at a first frequency and a wireless acoustic tag fixed to the object that emits a second acoustic wave at a second frequency different from the first frequency (Claim 4) or at least one acoustic generator for generating acoustic waves toward the body and a wireless transducer that emits electromagnetic radiation responsive to the acoustic wave (Claim 8) or at least one field generator for generating an electromagnetic field within the body and a wireless transducer fixed to the object that emits acoustic waves responsive to the electromagnetic field (Claim 16); and one or more detectors to detect the second acoustic wave (Claim 1) or to detect the reflected acoustic waves (Claim 4) or to detect the emitted electromagnetic radiation (Claim 8) or to detect emitted acoustic waves (Claim 16) and to generate signals responsive thereto; and a signal processor for processing the signals to determine six-dimensional position and orientation coordinates of the object within the patient's body.

The invention being claimed in Claims 25, 28, 32 and 40 respectively of the present application is method for determining the position of an object within a patient's body comprising the steps of fixing a wireless acoustic tag to the object wherein the tag comprises a shell having a cavity and a medium contained within the shell wherein the wireless tag emits a second acoustic wave in response to a first acoustic wave at a first frequency wherein the second acoustic wave is at a second frequency different from the first frequency (Claim 25) or fixing a wireless acoustic tag to the object wherein the wireless tag emits acoustic waves in response to first acoustic waves at a first frequency with a first spatial pattern of intensity variation wherein the acoustic waves are emitted by the tag at a second frequency with a second special pattern of intensity variation (Claim 28) or fixing a wireless transducer to the object wherein the transducer emits electromagnetic radiation in response to acoustic waves directed toward the body (Claim 32) or fixing a transducer to the object wherein the transducer emits acoustic waves in response to a generated electromagnetic field (Claim 40); and inserting the object in the patient's body; and detecting the second acoustic wave (Claim 25) or detecting the reflected acoustic waves (Claim 28) or detecting the emitted electromagnetic radiation (Claim 32) or detecting the emitted acoustic waves (Claim 40); and to generate signals responsive thereto so as to determine six-dimensional position and orientation coordinates of the object within the patient's body.

Gazdzinski teaches an endoscopic smart probe "for inspection, diagnosis and treatment of internal organs" of a patient. See Paragraph No. [0003]. Additionally, the smart probe of Gazdzinski "operates autonomously of external devices and is sized and shaped such that it may be introduced into the esophagus and ultimately small intestine of the patient undergoing examination/treatment." See Paragraph No. [0042].

Although this reference does include a vague reference to tracking its probe location, there is absolutely no teaching or suggestion of being able to determine position and orientation coordinates of the probe in the body, let alone six-dimensional position and orientation coordinates of a wireless tag or wireless transducer fixed to an object used in a patient's body.

Gilboa teaches a six-degree of freedom tracking system having a passive transponder on the object being tracked. Gilboa specifically describes an arrangement using electromagnetic field generators and a transponder 30 comprising coils 32, 34, and 36 that generate a "signal electromagnetic field" in response to the electromagnetic field generators 20. Col. 6, Lines 4-9. Although Gilboa does teach tracking in six-degrees of freedom, it is important to note that its system is entirely based on electromagnetic transmissions, i.e. electromagnetic transmissions by both the electromagnetic generators 20 and the electromagnetic transponder 30.

Therefore, one skilled in the art would not be lead by the teaching of Gilboa to experiment with its electromagnetic generator to electromagnetic transponder tracking system in an effort to achieve the Applicant's novel claimed invention. Thus, contrary to the Examiner's assertions, Gilboa is actually evidence of the non-obvious of the present invention. See In re Hedges, 783 F.2d 1038, 228 U.S.P.Q. 685, 687 (Fed. Cir. 1986).

Additionally, there is nothing in Gilboa and Gazdzinski that indicates that a skilled artisan would have been motivated, where six-dimensional position and orientation coordinate information was required, to provide an apparatus (and method of use) for tracking the position of an object in a patient's body comprising an acoustic wave generator and an acoustic wireless tag/transponder responsive thereto or an acoustic wave generator and an electromagnetic wireless tag/transponder responsive thereto or an electromagnetic field generator and an acoustic wireless tag/transponder responsive thereto. Gilboa nor Gazdzinski simply do not describe nor suggest this combination. It is clear that there is no incentive in either of these references to use these novel combinations generators and wireless tags as set forth by Applicant's claimed present invention. Therefore, unless a Declaration under 37 C.F.R. § 1.107(b) is submitted by the Examiner to support this argument, it is not factually supported by the record and may not be the basis for a rejection under 35 U.S.C. § 103. See In re Wagner and Folkers, 152 U.S.P.Q. 552, 559 (CCPA 1967).

According to the Examiner's argument, the combination of Gazdzinski with Gilboa in the rejection was directed toward providing motivation for modifying the structure of

Gazdzinski thereby providing a *prima facie* case of obviousness. However, neither Gilboa in combination with Gazdzinski render the present invention as claimed obvious.

The claimed present invention of Applicant's Claims 1, 4, 8, 16, 25, 28, 32 and 40 do not use or claim Gilboa's electromagnetic generator-to-electromagnetic transducer tracking system. And, Gilboa clearly teaches away from the novel acoustic-based wireless position and orientation coordinate technology in which the Applicant is claiming. Thus, at the time of Applicant's invention, the art actually taught away from the Applicants' invention. Accordingly, Gilboa taught away from the invention as claimed, and therefore, cannot rightly be combined with Gazdzinski to render Applicant's present invention obvious.

The prior art reference teaching of Law et al. is directed to a multifaceted ultrasound transducer system and method for its use. The system of Law et al. is a catheter-based system (not wireless) and merely teaches two active ultrasound radiating surfaces with different focal geometries.

Thus, there is no suggestion or disclosure in Gazdzinski, Gilboa or Law et al. for making the claimed present invention of Applicant's invention. The only suggestion to combine six-dimensional position and orientation coordinate information tracking with an apparatus (and method of use) for tracking the position of an object in a patient's body comprising an acoustic wave generator and an acoustic wireless tag/transponder responsive thereto or an acoustic wave generator and an electromagnetic wireless tag/transponder responsive thereto or an electromagnetic field generator and an acoustic wireless tag/transponder responsive thereto is provided by the Applicant's own Specification. Therefore, these prior art references are being improperly applied by the Examiner, using hindsight reconstruction to pick and choose elements from these references, in the face of contrary teachings in each of these references.

The PTO has the burden under section 103 of establishing a *prima facie* case of obviousness. This burden can only be satisfied by showing some objective teaching in the prior art or that knowledge generally available in the art would lead one of ordinary skill in the art to combine the relevant teachings of the reference. See In re Fine, 5 U.S.P.Q. 2d 1596, 1598 (Fed.

Cir. 1988). There is no suggestion or teaching in the art applied, e.g. Gazdzinski, Gilboa or Law et al., to motivate the combination of Applicant's claimed six-dimensional position and orientation coordinate information tracking apparatus (and method of use) for tracking the position of an object in a patient's body comprising an acoustic wave generator and an acoustic wireless tag/transponder responsive thereto or an acoustic wave generator and an electromagnetic wireless tag/transponder responsive thereto or an electromagnetic field generator and an acoustic wireless tag/transponder responsive thereto of Applicant's claimed present invention.

Additionally, neither Gazdzinski, Gilboa nor Law et al., recognized or appreciated that the combination of an acoustic wave generator and an acoustic wireless tag/transponder responsive thereto or an acoustic wave generator and an electromagnetic wireless tag/transponder responsive thereto or an electromagnetic field generator and an acoustic wireless tag/transponder responsive thereto will determine six-dimensional position and orientation coordinate information of an object within a patient's body as specified in Claims 1, 4, 8, 16, 25, 28, 32 and 40 of Applicant's claimed present invention. Accordingly, Applicants respectfully submit that a *prima facie* case of obviousness has not been established by the PTO. Therefore, Applicants respectfully request reconsideration and withdrawal of the rejection of Claims 1, 4, 8, 16, 25, 28, 32 and 40 and the dependent claims depending either directly or indirectly therefrom.

Therefore, for the reasons outlined above, the Applicants claimed present invention is both patentably distinct and non-obvious over the cited prior art references, and favorable action is respectfully requested.

Respectfully submitted,

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Dated: September 26, 2006